Claims

1. A method of making a sample vessel comprising:
a) melting a plastics material
b) introducing the molten plastics material into a mold, and
c) allowing the plastics material to set in the mold

wherein the mold defines a cavity with the shape of a sample vessel which comprises a tubular portion, which tubular portion has a maximum external cross sectional width of up to 5mm and an internal sample volume of up to 100µl wherein the tubular portion comprises a tubular external wall with a thickness of from 0.01 to 2mm.

2. A method as claimed in claim 1 wherein the tubular external wall has a thickness in the range of from 0.1mm to 0.5mm.

3. A method as claimed in claim 1 or claim 2 in which the molten plastics material is introduced into the mold by injection.

4. A method as claimed in any one of claims 1 to 3 in which the tubular portion

- has a truncated conical external surface, the angle between a meridian of the truncated conical external surface and the axis of the cone being in the range of from 0.1 degrees to 10 degrees,
- is closed at its narrower end, and
- is open at its wider end.

5. A method as claimed in any one of claims 1 to 4 in which the tubular portion has a maximum external cross sectional width of less than 3mm.

6. A method as claimed in any one of claims 2 to 5 in which the mean internal cross sectional width of the cavity of the tubular portion is in the range of from 0.02mm to 4.9mm.

7. A method as claimed in any one of claims 1 to 6 in which the sample tube further comprises a section of frustoconical shape directly or indirectly adjoining the tubular portion, which section

increases in external and optionally also internal diameter in the direction away from the tubular portion.

8. A method as claimed in any one of claims 1 to 7 in which the sample tube further comprises a neck portion comprising a cylindrical portion for receiving a closure means.

9. A method as claimed in any one of claims 1 to 8 in which the mold comprises a highly polished portion at the tip of the mold.

10. A method as claimed in any one of claims 1 to 9 in which the plastics material is a cyclo-olefin copolymer, a cyclo-olefin polymer or polypropylene.

11. A method as claimed in any one of claims 1 to 10 in which the plastics material is a cyclo olefin copolymer.

12. A method as claimed in any one of claims 1 to 10 in which the plastics material is an amorphous cyclo-olefin polymer.

13. A method as claimed in any one of claims 1 to 10 in which the plastics material is polypropylene.

14. A molded plastics material sample vessel which comprises a tubular portion which has a maximum external cross sectional width of up to 5mm and an internal sample volume of up to 100µl wherein the tubular portion comprises a tubular external wall with a thickness of from 0.01 to 2mm.

15. A molded plastics material sample vessel as claimed in claim 14 which has any of the features described in any one or more of claims 1 to 13.

16. A sample vessel made according to a method of any one of claims 1 to 13.

17. A sample holder unit comprising a plurality of sample vessels as claimed in any one of claims 14 to 16 made according to a method of any one of claims 1 to 13.

18. Use of a sample vessel made according to a method of any one of claims 1 to 13 or a sample vessel as claimed in any one of claims 14 to 16 for heating a sample.

19. Use of a sample vessel made according to a method of any one of claims 1 to 13 or a sample vessel as claimed in any one of claims 14 to 16, for holding a sample during a nucleic acid amplification reaction.

20. Use as claimed in claim 19 in which the sample is spectrophotometrically analysed during the nucleic acid amplification reaction.

21. Use of a sample vessel made according to a method of any one of claims 1 to 13 or a sample vessel as claimed in any one of claims 14 to 16, for holding a sample during a spectrophotometry experiment.